



SEQUENCE LISTING

<110> Richards, Nigel Gordon John
Chang, Christopher Harry
Peck, Ammon B.

<120> Polunucleotides Encoding Oxalate Decarboxylase from Aspergillus Niger and Methods of Use

<130> UF-314XC1

<140> US 10/644,123

<141> 2003-08-20

<150> US 60/404,892

<151> 2002-08-20

<160> 10

<170> PatentIn version 3.2

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<212> DNA

<213> Aspergillus niger

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gaacatgcgg tggagcttg ctgactccca cattcgcatt gaggttaagcc cttcgagagt 300

cttgtgtacg acaagcaaaa taggctaattg cactgcagga gggcggctgg acacgccaga 360

ctaccgtacg cgagctgcc acaagcaggg agcttgctgg agtaaacatg cgccttgatg 420

agggtgtcat tcgcgagctg cactggcatc gggaaagcaga gtgggcgtat gtgctggccg 480

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agggtgacct ctggtacttc ccatcgccatc atccccattc acttcagggt ctcagtccta 600

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cacgcataag atgctcgctc aagaacccga gcatacctt ggcggagagg tgcgcatcac	840

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<213> Aspergillus niger

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20								25							

Val	Asp	Ala	Ile	Gly	Glu	Gly	His	Glu	Pro	Leu	Pro	Trp	Arg	Met	Gly
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35							40								

Asp	Gly	Ala	Thr	Ile	Met	Gly	Pro	Arg	Asn	Lys	Asp	Arg	Glu	Arg	Gln
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Asn	Pro	Asp	Met	Leu	Arg	Pro	Pro	Ser	Thr	Asp	His	Gly	Asn	Met	Pro
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Asn	Met	Arg	Trp	Ser	Phe	Ala	Asp	Ser	His	Ile	Arg	Ile	Glu	Glu	Gly
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Gly	Trp	Thr	Arg	Gln	Thr	Thr	Val	Arg	Glu	Leu	Pro	Thr	Ser	Arg	Glu
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Leu	Ala	Gly	Val	Asn	Met	Arg	Leu	Asp	Glu	Gly	Val	Ile	Arg	Glu	Leu
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His	Trp	His	Arg	Glu	Ala	Glu	Trp	Ala	Tyr	Val	Leu	Ala	Gly	Arg	Val
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Arg	Val	Thr	Gly	Leu	Asp	Leu	Glu	Gly	Ser	Phe	Ile	Asp	Asp	Leu	
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Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser Leu
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 Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp Asp
 180 185 190
 Gly Asn Phe Ser Glu Glu Ser Thr Phe Leu Leu Thr Asp Trp Ile Ala
 195 200 205
 His Thr Pro Lys Ser Val Leu Ala Gly Asn Phe Arg Met Arg Pro Gln
 210 215 220
 Thr Phe Lys Asn Ile Pro Pro Ser Glu Lys Tyr Ile Phe Gln Gly Ser
 225 230 235 240
 Val Pro Asp Ser Ile Pro Lys Glu Leu Pro Arg Asn Phe Lys Ala Ser
 245 250 255
 Lys Gln Arg Phe Thr His Lys Met Leu Ala Gln Glu Pro Glu His Thr
 260 265 270
 Ser Gly Gly Glu Val Arg Ile Thr Asp Ser Ser Asn Phe Pro Ile Ser
 275 280 285
 Lys Thr Val Ala Ala Ala His Leu Thr Ile Asn Pro Gly Ala Ile Arg
 290 295 300
 Glu Met His Trp His Pro Asn Ala Asp Glu Trp Ser Tyr Phe Lys Arg
 305 310 315 320
 Gly Arg Ala Arg Val Thr Ile Phe Ala Ala Glu Gly Asn Ala Arg Thr
 325 330 335
 Phe Asp Tyr Val Ala Gly Asp Val Gly Ile Val Pro Arg Asn Met Gly
 340 345 350
 His Phe Ile Glu Asn Leu Ser Asp Asp Glu Glu Val Glu Val Leu Glu
 355 360 365
 Ile Phe Arg Ala Asp Arg Phe Arg Asp Phe Ser Leu Phe Gln Trp Met
 370 375 380
 Gly Glu Thr Pro Gln Arg Met Val Ala Glu His Val Phe Lys Asp Asp
 385 390 395 400
 Pro Asp Ala Ala Arg Glu Phe Leu Lys Ser Val Glu Ser Gly Glu Lys
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 Asp Pro Ile Arg Ser Pro Ser Glu
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 <211> 409
 <212> PRT

<213> Aspergillus niger

<400> 4

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Gly Asp Gly Ala Thr Ile Met Gly Pro Arg Asn Lys Asp Arg Glu Arg
35 40 45

Gln Asn Pro Asp Met Leu Arg Pro Pro Ser Thr Asp His Gly Asn Met
50 55 60

Pro Asn Met Arg Trp Ser Phe Ala Asp Ser His Ile Arg Ile Glu Glu
65 70 75 80

Gly Gly Trp Thr Arg Gln Thr Thr Val Arg Glu Leu Pro Thr Ser Arg
85 90 95

Glu Leu Ala Gly Val Asn Met Arg Leu Asp Glu Gly Val Ile Arg Glu
100 105 110

Leu His Trp His Arg Glu Ala Glu Trp Ala Tyr Val Leu Ala Gly Arg
115 120 125

Val Arg Val Thr Gly Leu Asp Leu Glu Gly Ser Phe Ile Asp Asp
130 135 140

Leu Glu Glu Gly Asp Leu Trp Tyr Phe Pro Ser Gly His Pro His Ser
145 150 155 160

Leu Gln Gly Leu Ser Pro Asn Gly Thr Glu Phe Leu Leu Ile Phe Asp
165 170 175

Asp Gly Asn Phe Ser Glu Glu Ser Thr Phe Leu Leu Thr Asp Trp Ile
180 185 190

Ala His Thr Pro Lys Ser Val Leu Ala Gly Asn Phe Arg Met Arg Pro
195 200 205

Gln Thr Phe Lys Asn Ile Pro Pro Ser Glu Lys Tyr Ile Phe Gln Gly
210 215 220

Ser Val Pro Asp Ser Ile Pro Lys Glu Leu Pro Arg Asn Phe Lys Ala
225 230 235 240

Ser Lys Gln Arg Phe Thr His Lys Met Leu Ala Gln Glu Pro Glu His
245 250 255

Thr Ser Gly Gly Glu Val Arg Ile Thr Asp Ser Ser Asn Phe Pro Ile
260 265 270

Ser Lys Thr Val Ala Ala Ala His Leu Thr Ile Asn Pro Gly Ala Ile
 275 280 285
 Arg Glu Met His Trp His Pro Asn Ala Asp Glu Trp Ser Tyr Phe Lys
 290 295 300
 Arg Gly Arg Ala Arg Val Thr Ile Phe Ala Ala Glu Gly Asn Ala Arg
 305 310 315 320
 Thr Phe Asp Tyr Val Ala Gly Asp Val Gly Ile Val Pro Arg Asn Met
 325 330 335
 Gly His Phe Ile Glu Asn Leu Ser Asp Asp Glu Glu Val Glu Val Leu
 340 345 350
 Glu Ile Phe Arg Ala Asp Arg Phe Arg Asp Phe Ser Leu Phe Gln Trp
 355 360 365
 Met Gly Glu Thr Pro Gln Arg Met Val Ala Glu His Val Phe Lys Asp
 370 375 380
 Asp Pro Asp Ala Ala Arg Glu Phe Leu Lys Ser Val Glu Ser Gly Glu
 385 390 395 400
 Lys Asp Pro Ile Arg Ser Pro Ser Glu
 405

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 <212> DNA
 <213> Artificial sequence

<220>
 <223> PCR primer

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21

<210> 6
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<220>
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<210> 7
 <211> 11
 <212> PRT

<213> Aspergillus niger

<400> 7

Phe Gln Asp Lys Pro Phe Thr Pro Asp His Arg
1 5 10

<210> 8

<211> 4

<212> PRT

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<220>

<223> Anticipated N-terminal sequence of oxalate decarboxylase of
Aspergillus niger

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<210> 9

<211> 385

<212> PRT

<213> Bacillus subtilis

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Ala Thr Val Lys Ile Pro Arg Asn Ile Glu Arg Asp Arg Gln Asn Pro
20 25 30

Asp Met Leu Val Pro Pro Glu Thr Asp His Gly Thr Val Ser Asn Met
35 40 45

Lys Phe Ser Phe Ser Asp Thr His Asn Arg Leu Glu Lys Gly Gly Tyr
50 55 60

Ala Arg Glu Val Thr Val Arg Glu Leu Pro Ile Ser Glu Asn Leu Ala
65 70 75 80

Ser Val Asn Met Arg Leu Lys Pro Gly Ala Ile Arg Glu Leu His Trp
85 90 95

His Lys Glu Ala Glu Trp Ala Tyr Met Ile Tyr Gly Ser Ala Arg Val
100 105 110

Thr Ile Val Asp Glu Lys Gly Arg Ser Phe Ile Asp Asp Val Gly Glu
115 120 125

Gly Asp Leu Trp Tyr Phe Pro Ser Gly Leu Pro His Ser Ile Gln Ala
 130 135 140

Leu Glu Glu Gly Ala Glu Phe Leu Leu Val Phe Asp Asp Gly Ser Phe
 145 150 155 160

Ser Glu Asn Ser Thr Phe Gln Leu Thr Asp Trp Leu Ala His Thr Pro
 165 170 175

Lys Glu Val Ile Ala Ala Asn Phe Gly Val Thr Lys Glu Glu Ile Ser
 180 185 190

Asn Leu Pro Gly Lys Glu Lys Tyr Ile Phe Glu Asn Gln Leu Pro Gly
 195 200 205

Ser Leu Lys Asp Asp Ile Val Glu Gly Pro Asn Gly Glu Val Pro Tyr
 210 215 220

Pro Phe Thr Tyr Arg Leu Leu Glu Gln Glu Pro Ile Glu Ser Glu Gly
 225 230 235 240

Gly Lys Val Tyr Ile Ala Asp Ser Thr Asn Phe Lys Val Ser Lys Thr
 245 250 255

Ile Ala Ser Ala Leu Val Thr Val Glu Pro Gly Ala Met Arg Glu Leu
 260 265 270

His Trp His Pro Asn Thr His Glu Trp Gln Tyr Tyr Ile Ser Gly Lys
 275 280 285

Ala Arg Met Thr Val Phe Ala Ser Asp Gly His Ala Arg Thr Phe Asn
 290 295 300

Tyr Gln Ala Gly Asp Val Gly Tyr Val Pro Phe Ala Met Gly His Tyr
 305 310 315 320

Val Glu Asn Ile Gly Asp Glu Pro Leu Val Phe Leu Glu Ile Phe Lys
 325 330 335

Asp Asp His Tyr Ala Asp Val Ser Leu Asn Gln Trp Leu Ala Met Leu
 340 345 350

Pro Glu Thr Phe Val Gln Ala His Leu Asp Leu Gly Lys Asp Phe Thr
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Asp Val Leu Ser Lys Glu Lys His Pro Val Val Lys Lys Lys Cys Ser
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Lys
 385

<210> 10
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 <212> DNA

<213> Aspergillus niger

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